

**In the Claims:**

On page 14, please delete line 1 and insert the following heading—What is claimed is:--.

Please amend Claims 1-2 and 8-9 as follows and please delete, without prejudice, claims 3-7.

1. (Currently Amended) Hall sensor array comprising:

a first ~~(1A, 1B)~~ and at least one additional pair ~~(2A, 2B; 2A, 2B, 3A, 3B)~~ of Hall sensor elements,

wherein each hall sensor element ~~(1A, 1B, 2A, 2B; 1A, 1B, 2A, 2B, 3A, 3B)~~ has four terminals ~~(K1, K2, K3, K4)~~, of which two a first and a third terminal terminals (K1, K3) act as power supply terminals for supplying an operating current ~~( $I_{operation}$ )~~ and two a second and a fourth terminal terminals (K2, K4) act as measurement terminals for measuring a Hall voltage ~~( $U_{Hall}$ )~~,

wherein the Hall sensor elements ~~(1A, 1B, 2A, 2B; 1A, 1B, 2A, 2B, 3A, 3B)~~ are so arranged that the current directions of the operating current ~~( $I_{operation}$ )~~ in the two Hall sensor elements of each pair are offset at an angle of approximately  $90^\circ$  to one another,

wherein the Hall sensor elements ~~(2A, 2B; 2A, 2B, 3A, 3B)~~ of the additional pair(s) are so arranged that their ~~operating~~ current directions of the operating current are offset at an angle of approximately  $90^\circ/n$  to the current directions of the operating current ~~directions~~ of the first pair ~~(1A, 1B)~~ of Hall sensor elements, n being the total number of Hall sensor element pairs ~~and  $n \geq 2$~~ , and

wherein respective the first terminals of the measurement terminals terminal (K1), the third terminals (K3), the second terminals (K2) and the fourth terminals (K4) of the Hall sensor elements (1A, 1B, 2A, 2B; 1A, 1B, 2A, 2B, 3A, 3B) are respectively and respective

second terminals of the measurement terminals of the Hall sensor elements are connected together for measurement of the Hall voltage,

wherein the Hall sensor array also has switches and wherein the respective terminals of the Hall sensor elements are connected to the switches, so that the respective first and second supply terminals for supplying an operating current and the respective first and second measurement terminals for measuring a Hall voltage can be switched over from one measurement to a subsequent measurement in such a way that the current directions of the operating current in the Hall sensor elements and the Hall voltage tapping directions can be rotated through approximately 90° from one measurement to a subsequent measurement, to each other electrically, thus permitting the operating element ( $I_{\text{operation}}$ ) to be supplied over the electrically interlinked first and third terminals (K1, K3) of all the Hall sensor elements and the Hall voltage ( $U_{\text{Hall}}$ ) to be measured over the electrically interlinked second and fourth terminals (K2, K4) of all the Hall sensor elements (1A, 1B, 2A, 2B; 1A, 1B, 2A, 2B, 3A, 3B)

wherein the Hall sensor array also has a controller by means of which the switches are controllable in such a way that the Hall sensor array is operable in spinning current operation for generating a Hall signal and wherein the offset voltages of the Hall sensor elements approximately cancel one another out in a revolution so that the Hall signal contributions which actually depend on the magnetic field remain, and

wherein respective first supply terminals of each Hall sensor element are connected together and to a first terminal of a common voltage source and respective second supply terminals of each Hall sensor element are connected together and to the second terminal of the common voltage source so that the common voltage source supplies an operating current for the Hall sensor elements.

2. (Currently Amended) Hall sensor array according to claim 1, wherein the first supply terminals (K1) are connected together electrically by being interwired, the third terminals (K3), the second supply terminals (K2) are connected together electrically by being interwired, and the fourth the first measurement terminals (K4) of the Hall sensor elements (1A, 1B, 2A, 2B; 1A, 1B, 2A, 2B, 3A, 3B) are respectively connected together electrically by being interwired and the second measurement terminals are connected together electrically by being interwired.

3. (Canceled)

4. (Canceled)

5. (Canceled)

6. (Canceled)

7. (Canceled)

8. (Currently Amended) Hall sensor array according to ~~one of the~~ claims 1 to 7, wherein the Hall sensor elements of a pair are geometrically identical.

9. (Currently Amended) Hall sensor array according to ~~one of the~~ claims 1 to 8, wherein the Hall sensor elements of different pairs are geometrically different.